

Process Sheet

[illegible]

Job Number: 

Seq. #:	Machine Or Operation:	Description :
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1.0	D6011115	Crosstube Material	
-----	----------	--------------------	--

Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)
Pick:
Qty Part number Description Batch
1 D6011-115 Crosstube 32307
Check OD = 2.750"; ID = 1.450"

A barcode is located at the bottom center of the page. To its left, the text "2.0 MORI SEIKI" is printed. To its right, the text "MORI SEIKI CNC LATHE LARGE" is printed.

Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand & install plugs DT8531 on both ends as per Folio FA248

2-Turn first side as per Folio FA248

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D407-667-245. R. M. 08.04.16

3.0 QC1 INSPECT ALL DIM TO DIM SHEET

Comment: INSPECT ALL DIM TO DIM SHEET 0 in 8.04.17 (1)

A horizontal strip containing a barcode on the left, the text 'MORI SEIKI CNC LATHE LARGE' in the center, and another barcode on the right. Above the first barcode is the number '4.0' and the text 'MORI SEIKI'.

Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA248

2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D407-667-245

3-Remove sand and plugs

am 08-04-70

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 3/13/2008 1:02:11 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 407 HIGH AFT X-TUBE ASSEMBLY

Job Number: 38010

Part Number: D407667205TRN

Job Number:



Seq. #:

Machine Or Operation:

Description:

4-Scribe part # and batch # using vibrating stylus as per Dwg D407-667-245
Inside of Cuff(Donot engrave on outside of tube)

Am 08.04.17

5.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

Am 08.04.17

6.0

QC8

SECOND CHECK



Comment: SECOND CHECK

5 08/04/18

7.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Polish entire outside surface of crosstube

EL 8-4-21

8.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1
Ensure no sand is in the tube before alodine.

EL 8-4-21

9.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

ET 08-04-21

10.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and stock in kanban rack
Location: *Cross tubes*

EL 8-4-21

11.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

08/04/22

Job Completion



U 08-04-22

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	38010
Description: Crosstube Assembly	Part Number:	D407-667-245
Inspection Dwg: D407-667-245 Rev: D		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ **First Article**
☐ **Prototype**

Inspection Sheet Drawing Dimension		Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.490	+0.005/-0.000	2.491	✓			
	1.832	+0.005/-0.000	1.834	✓			
	1.838	+0.005/-0.000	1.843	✓			
	1.892	+0.005/-0.000	1.897	✓			
	2.052	+0.005/-0.000	2.057	✓			
	2.206	+0.005/-0.000	2.210	✓			
	2.521	+0.005/-0.000	2.525	✓			
	2.633	+0.005/-0.000	2.633	✓			
	4.10	+/-0.030	4.10	✓			
	4.978	+/-0.030	5.00	✓			
	2.040	+0.000/-0.010	2.040	✓			
	0.125	+/-0.010	0.125	✓			
	R0.063	+/-0.010	R0.063	✓			
	R0.500	+/-0.010	R0.500	✓			
SIDE B	2.490	+0.005/-0.000	2.492	✓			
	1.832	+0.005/-0.000	1.834	✓			
	1.838	+0.005/-0.000	1.842	✓			
	1.892	+0.005/-0.000	1.897	✓			
	2.052	+0.005/-0.000	2.057	✓			
	2.206	+0.005/-0.000	2.210	✓			
	2.521	+0.005/-0.000	2.523	✓			
	2.633	+0.005/-0.000	2.633	✓			
	4.10	+/-0.030	4.10	✓			
	4.978	+/-0.030	5.00	✓			
	2.040	+0.000/-0.010	2.040	✓			
	0.125	+/-0.010	0.125	✓			
	R0.063	+/-0.010	R0.063	✓			
	R0.500	+/-0.010	R0.500	✓			
	112.91	+/-0.020	112.91	✓			

Measured by:	<i>Q m</i>	Audited by:	<i>Q</i>	Prototype Approval:	N/A
Date:	08.04.17	Date:	28/04/18	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.04.21	New Issue (P/O D407-667-205)	KJ/RF	
B	06.03.09	Dwg Rev updated	KJ/JLM	
C	06.03.30	Tolerance revised for 4.978 dimension	KJ/JLM	
D	07.02.19	Dwg Rev updated	KJ/JLM	<i>[Signature]</i>

DART

DESIGN <i>PH</i>	DRAWN BY <i>PH</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D407-667-245	REV. D SHEET 1 OF 3
DATE 07.02.07		TITLE CROSSTUBE ASS'Y (407 HIGH AFT) SCALE NTS	
A	02.05.13	NEW ISSUE	
B	03.05.21	ADD CHAFING SHIELD	
C	05.07.26	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	
D	07.02.07	ADD VIEW FOR OEM SKID HOLES, ROTATE ORIENTATION OF CLAMPS SECTION F-F, REMOVE -851 ABRASION STRIP, ADD MAGNOBOND 6398, ADD CUSHION	

RELEASED

07.02.14 *[Signature]*

Qty	Part Number	Description
X	D407-667-245	CROSSTUBE ASSEMBLY (407 HIGH AFT)
1	D6011-115	CROSSTUBE
2	D2856-400-773	ABRASION STRIP
2	D2873-043	NUT PLATE
2	D2873-045	NUT PLATE
1	D2894-1	SUPPORT
2	D3190-1	CHAFING SHIELD
2	D3595-075-430	RUBBER CUSHION
14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
4	MS21920-22	CLAMP
2	MS21920-25	CLAMP (OR MS21920-24)

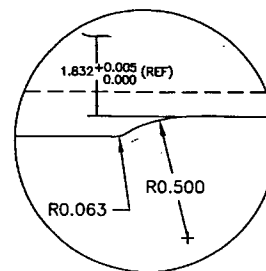
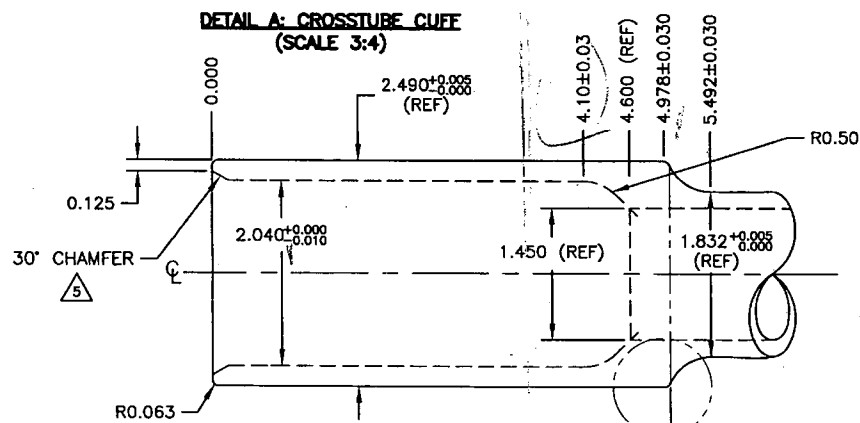
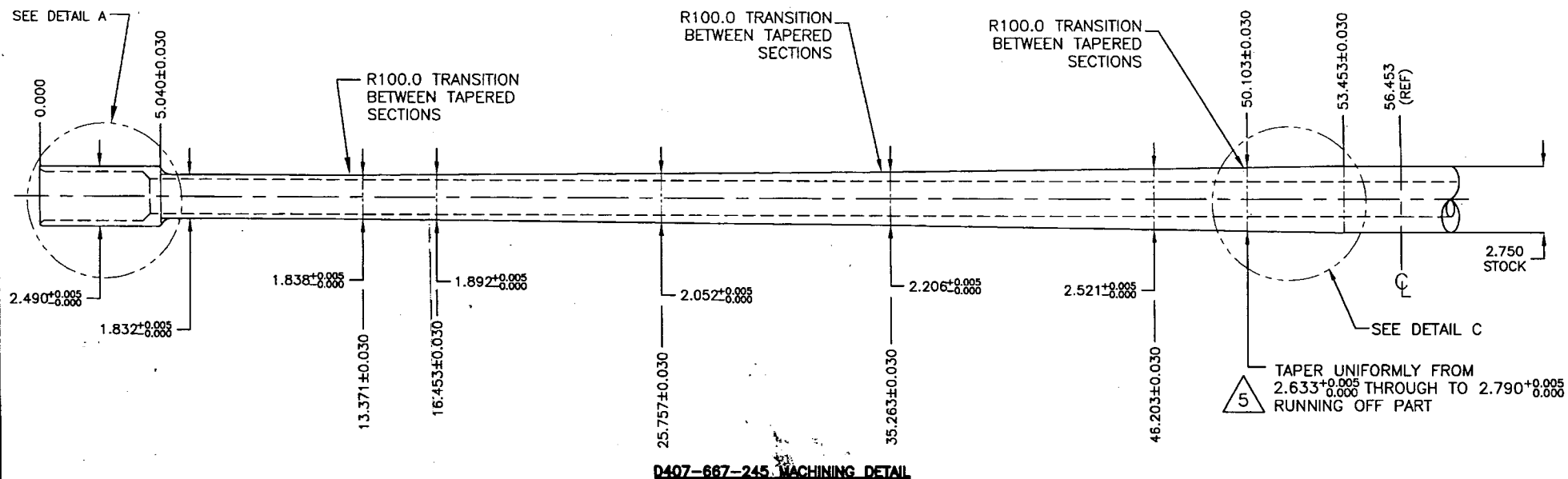
GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) MATERIAL: MANUFACTURED FROM D6011-115
FINISHED LENGTH = 112.91±0.020
- 3) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 4) PART IS SYMMETRIC ABOUT CENTERLINE.
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 6) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 7) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 8) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 9) INSTALL D2856-400-773 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, PER QSI 035.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) INSTALL D2894-1 CENTER SUPPORT USING A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND NO. 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-25 CLAMPS WITH D3595-075-430 RUBBER CUSHIONS TO SECURE D2894-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.
NOTE: MS21920-24 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
- 13) TORQUE CLAMPS 80 TO 100 IN-LB.
- 14) INSTALL D3190-1 CHAFING SHIELDS SO THAT OVERLAP IS ON BOTTOM SIDE OF CROSSTUBE OPPOSITE D2894-1 SUPPORT.

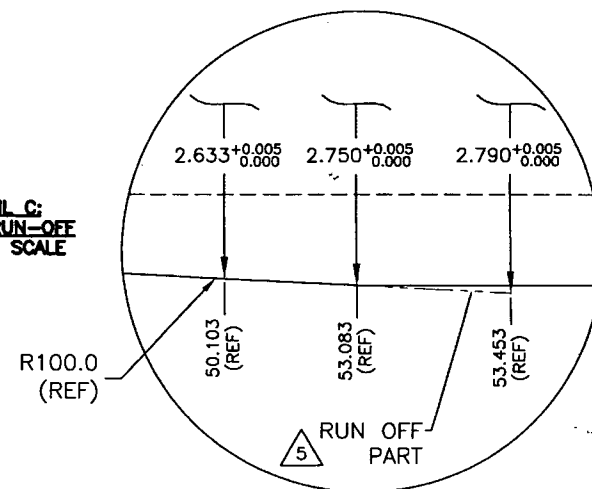
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DETAIL C: TAPER RUN-OFF NOT TO SCALE



REVISION

07.02.14

#

SEE DETAIL B

NO. 38010

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DESIGN	PH	DRAWN BY	PH	DART	DART AEROSPACE LTD. WILLOWBURG, ONTARIO, CANADA
CHECKED	#	APPROVED	#	DRAWING NO.	D407-667-245
DATE	07.02.07	TITLE	CROSSTUBE ASS'Y (407 HIGH AFT)	SCALE	1:4
					SHEET 3 OF 3
					REV. D